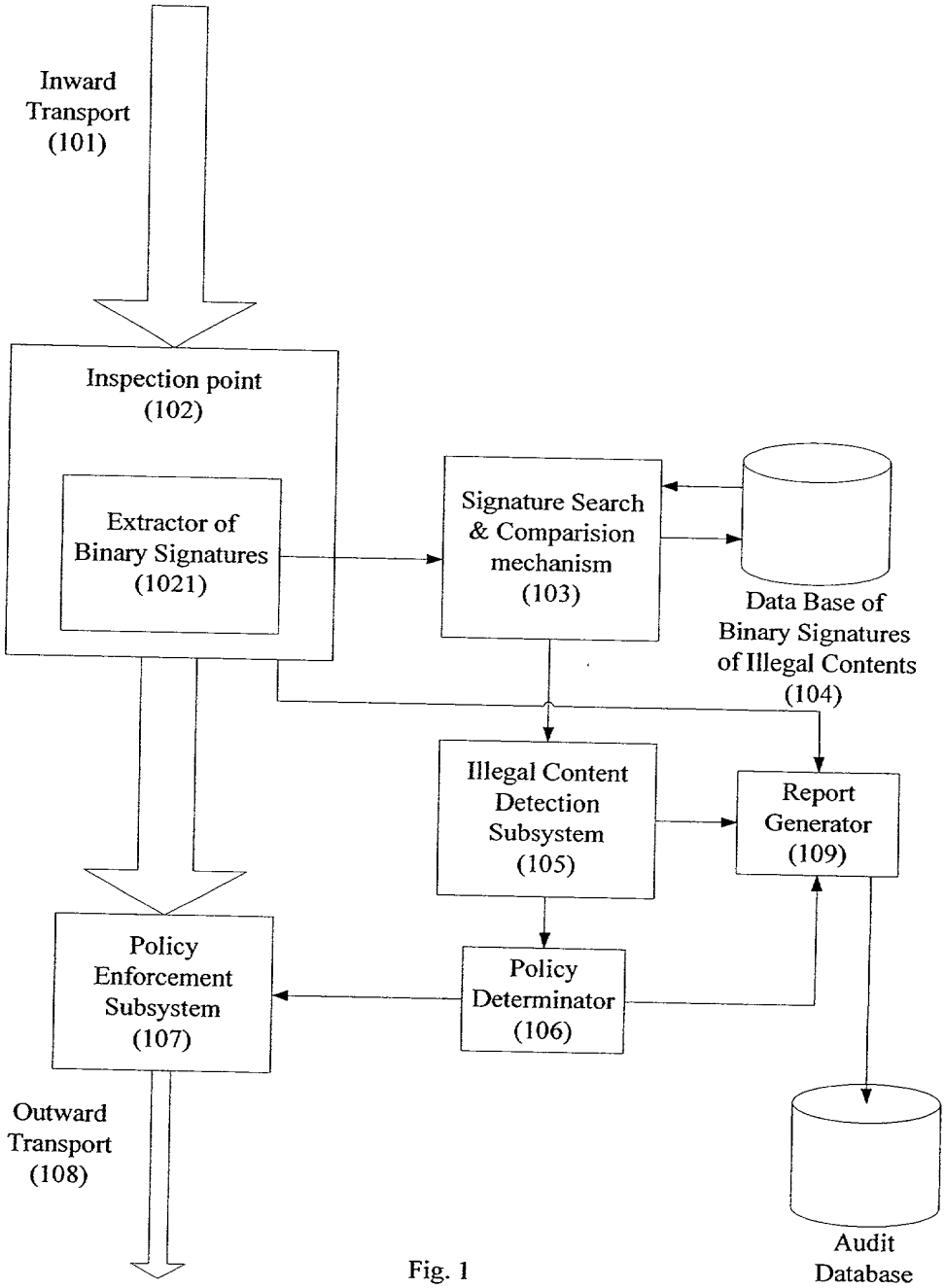
Inward
Transport
(101)
Inspection point
(102)
Extractor of
Binary Signatures
(1021)
Signature Search
& Comparision
mechanism
(103)
Data Base of
Binary Signatures
of Illegal Contents
(104)
Illegal Content
Detection
Subsystem
(105)
Report
Generator
(109)
Policy
Enforcement
Subsystem
(107)
Policy
Determinator
(106)
Outward
Transport
(108)
Audit
Database
(110)

Fig. 1

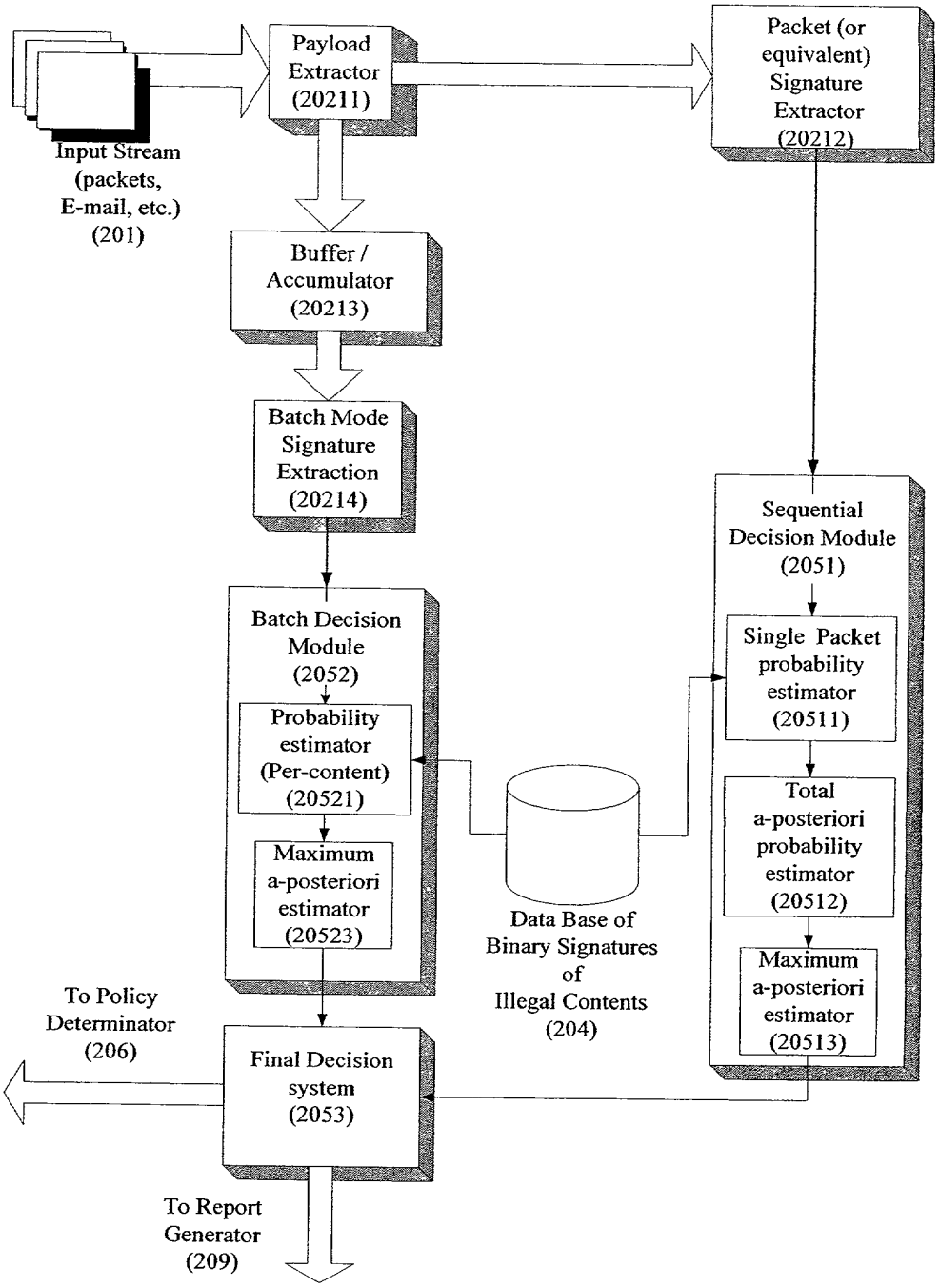
Input Stream
(packets,
E-mail, etc.)
(201)
Payload
Extractor
(20211)
Packet (or
equivalent)
Signature
Extractor
(20212)
Buffer /
Accumulator
(20213)
Batch Mode
Signature
Extraction
(20214)
Sequential
Decision Module
(2051)
Batch Decision
Module
(2052)
Probability
estimator
(Per-content)
(20521)
Maximum
a-posteriori
estimator
(20523)
Single Packet
probability
estimator
(20511)
Total
a-posteriori
probability
estimator
(20512)
Maximum
a-posteriori
estimator
(20513)
Data Base of
Binary Signatures
of
Illegal Contents
(204)
To Policy
Determinator
(206)
Final Decision
system
(2053)
To Report
Generator
(209)

Fig. 2

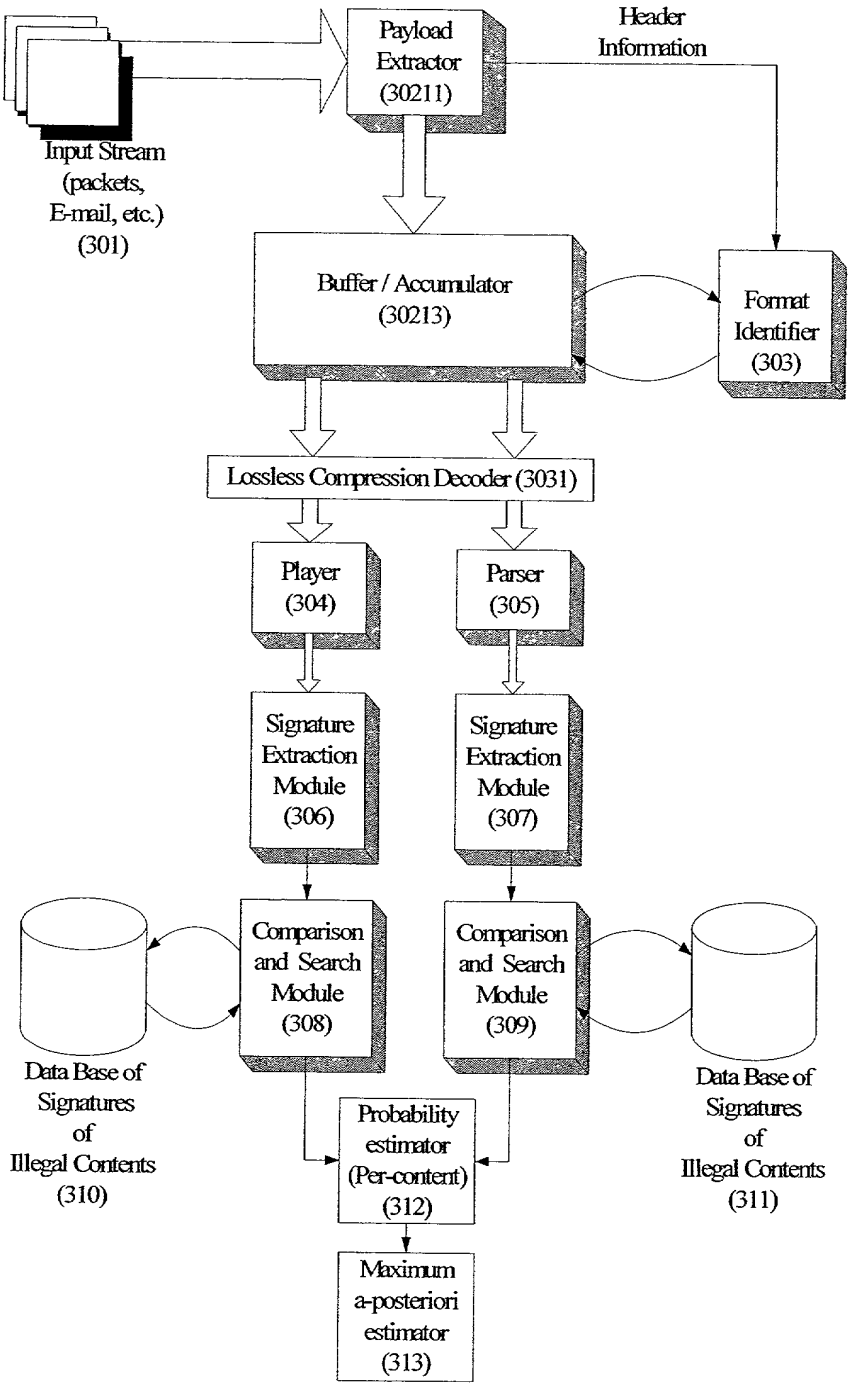
Payload Extractor (30211)
Header Information
Input Stream (packets, E-mail, etc.) (301)
Buffer / Accumulator (30213)
Format Identifier (303)
Lossless Compression Decoder (3031)
Player (304)
Parser (305)
Signature Extraction Module (306)
Signature Extraction Module (307)
Comparison and Search Module (308)
Comparison and Search Module (309)
Data Base of Signatures of Illegal Contents (310)
Data Base of Signatures of Illegal Contents (311)
Probability estimator (Per-content) (312)
Maximum a-posteriori estimator (313)

Fig. 3

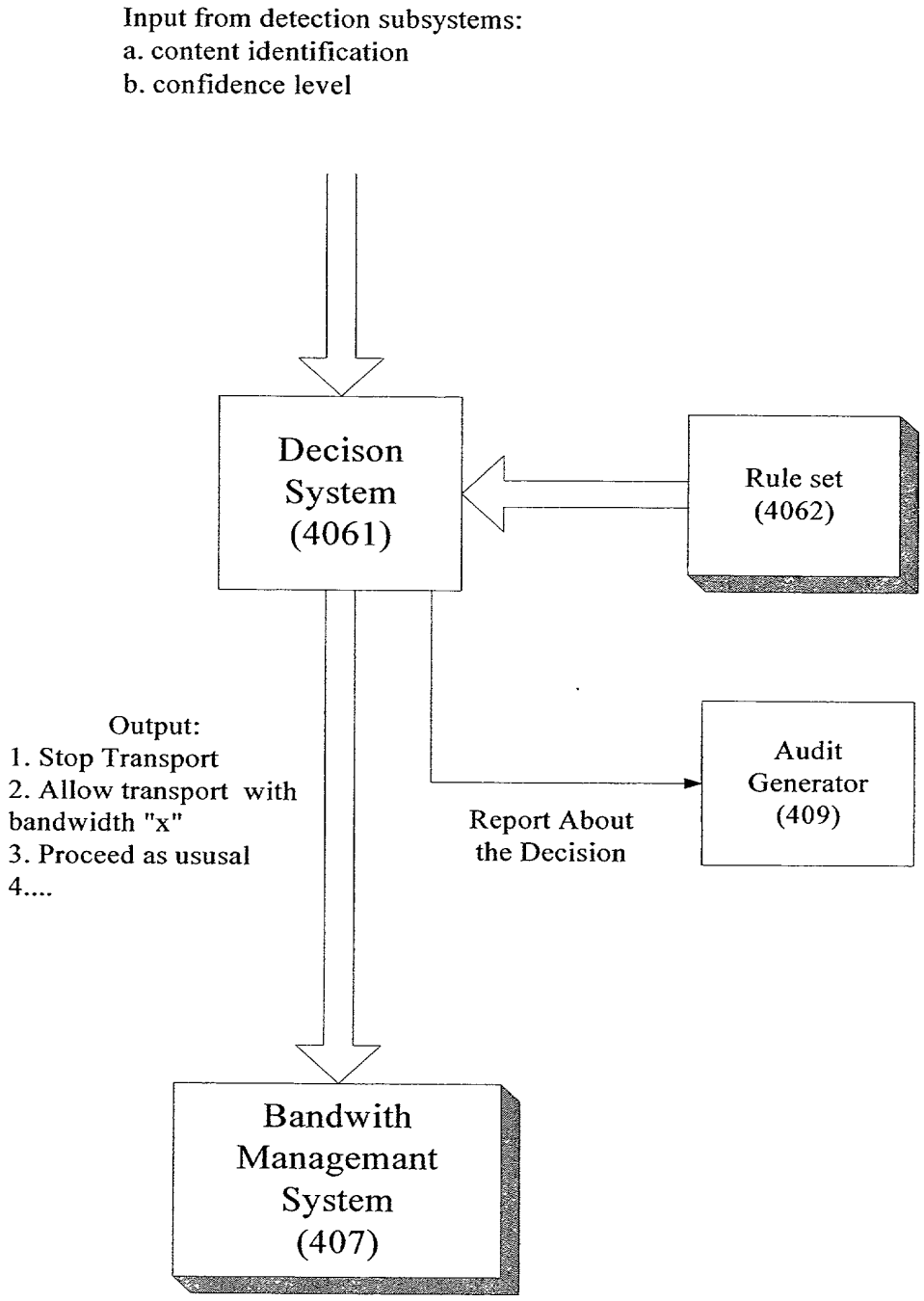
Input from detection subsystems:
a. content identification
b. confidence level
Decison System (4061)
Rule set (4062)
Audit Generator (409)
Report About the Decision
Output:
1. Stop Transport
2. Allow transport with bandwidth "x"
3. Proceed as ususal
4....
Bandwith Managemant System (407)

Fig 4

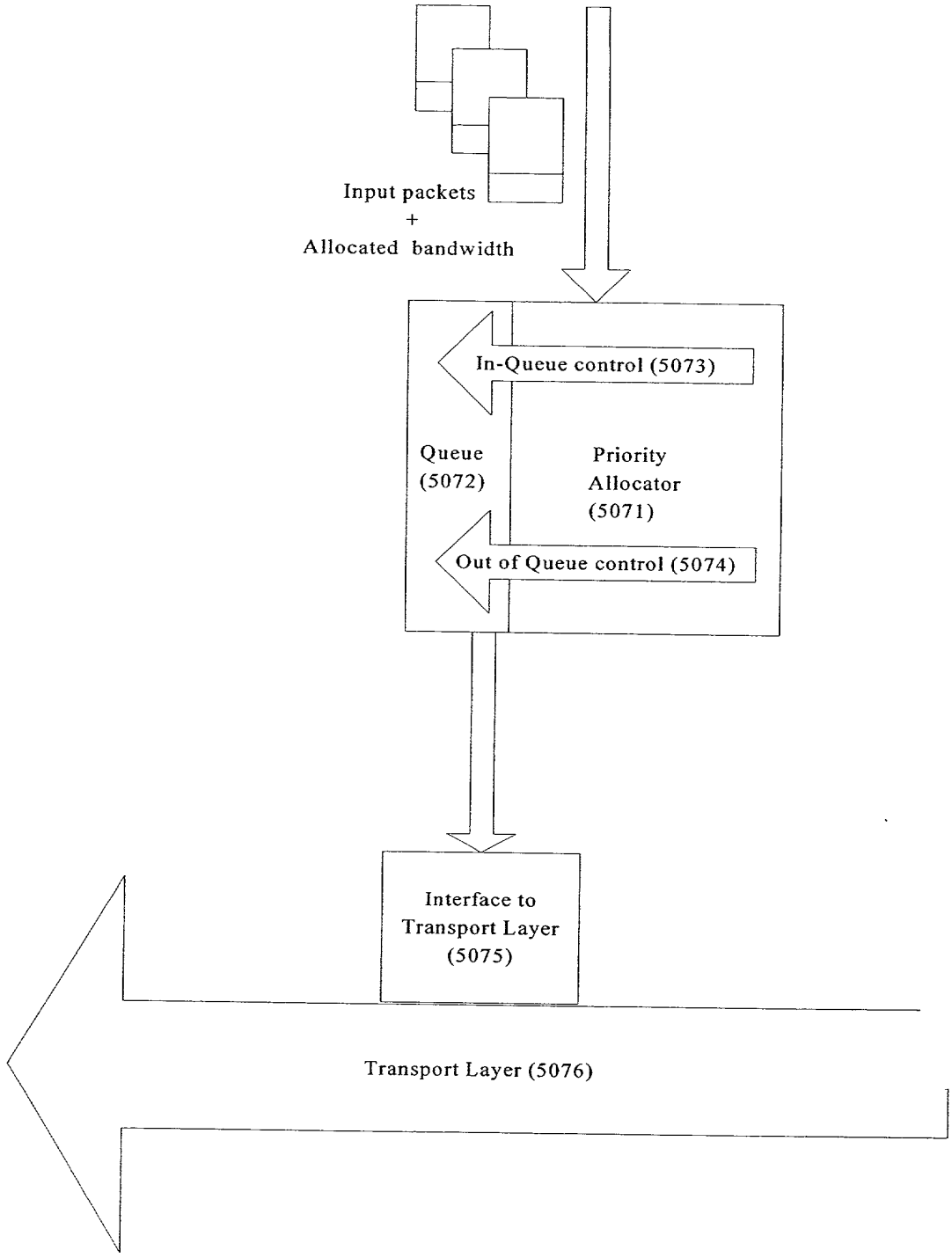
Input packets
+
Allocated bandwidth
In-Queue control (5073)
Queue
(5072)
Priority
Allocator
(5071)
Out of Queue control (5074)
Interface to
Transport Layer
(5075)
Transport Layer (5076)

Fig 5

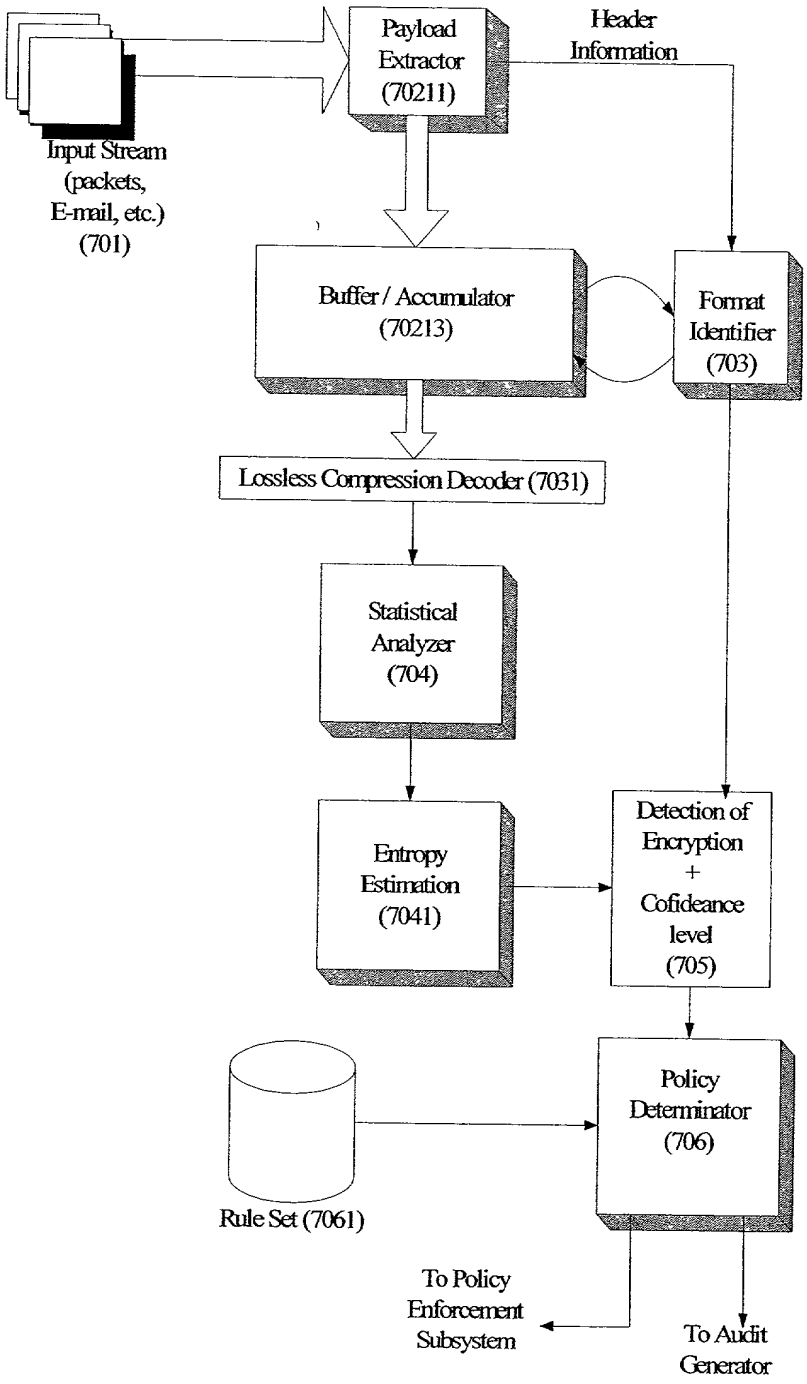
Payload Extractor (70211)
Header Information
Input Stream (packets, E-mail, etc.) (701)
Buffer / Accumulator (70213)
Format Identifier (703)
Lossless Compression Decoder (7031)
Statistical Analyzer (704)
Entropy Estimation (7041)
Detection of Encryption + Cofideance level (705)
Policy Determinator (706)
Rule Set (7061)
To Policy Enforcement Subsystem
To Audit Generator

Fig. 6

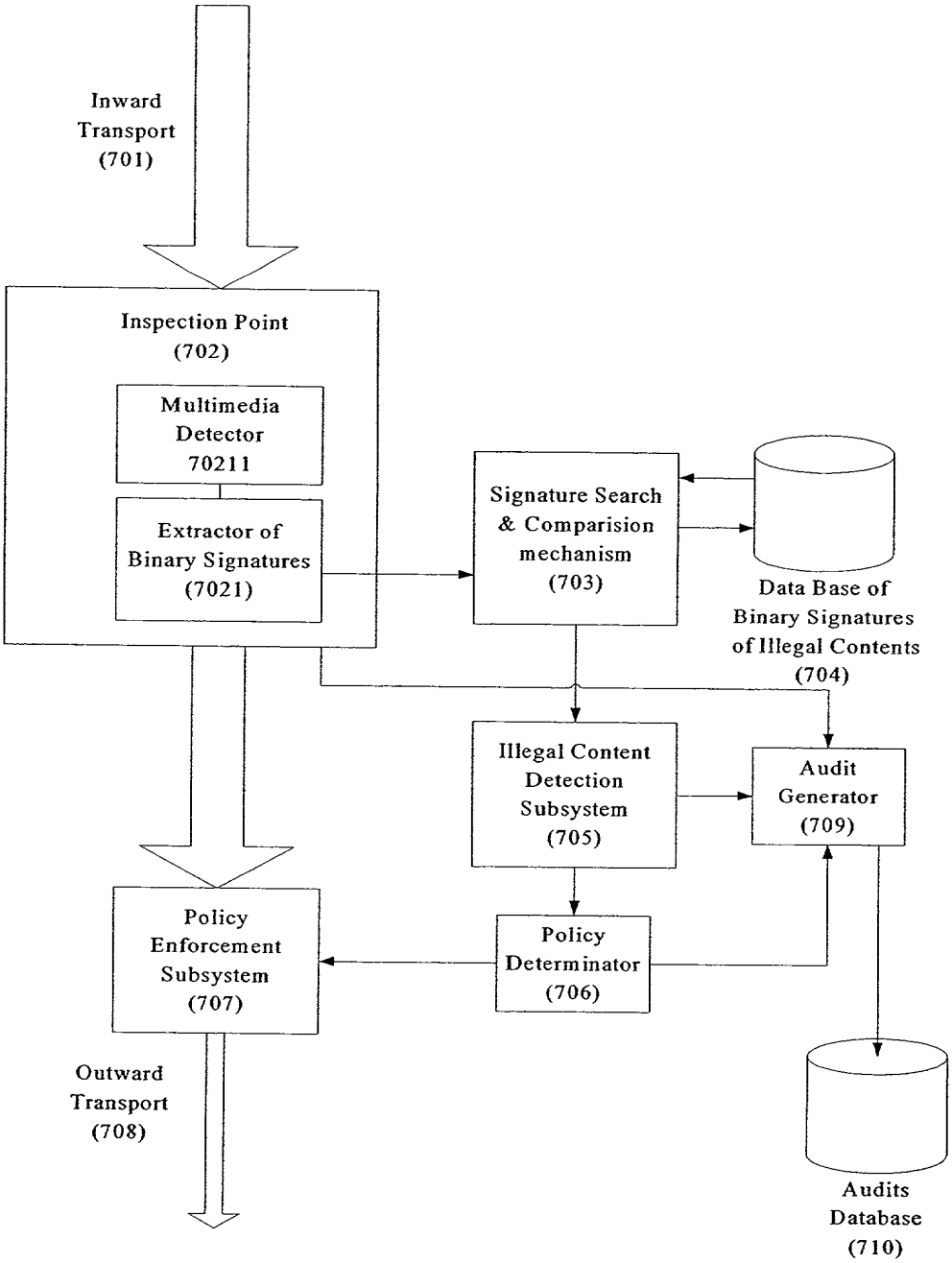
Inward
Transport
(701)
Inspection Point
(702)
Multimedia
Detector
70211
Extractor of
Binary Signatures
(7021)
Signature Search
& Comparision
mechanism
(703)
Data Base of
Binary Signatures
of Illegal Contents
(704)
Illegal Content
Detection
Subsystem
(705)
Audit
Generator
(709)
Policy
Enforcement
Subsystem
(707)
Policy
Determinator
(706)
Outward
Transport
(708)
Audits
Database
(710)

Fig. 7

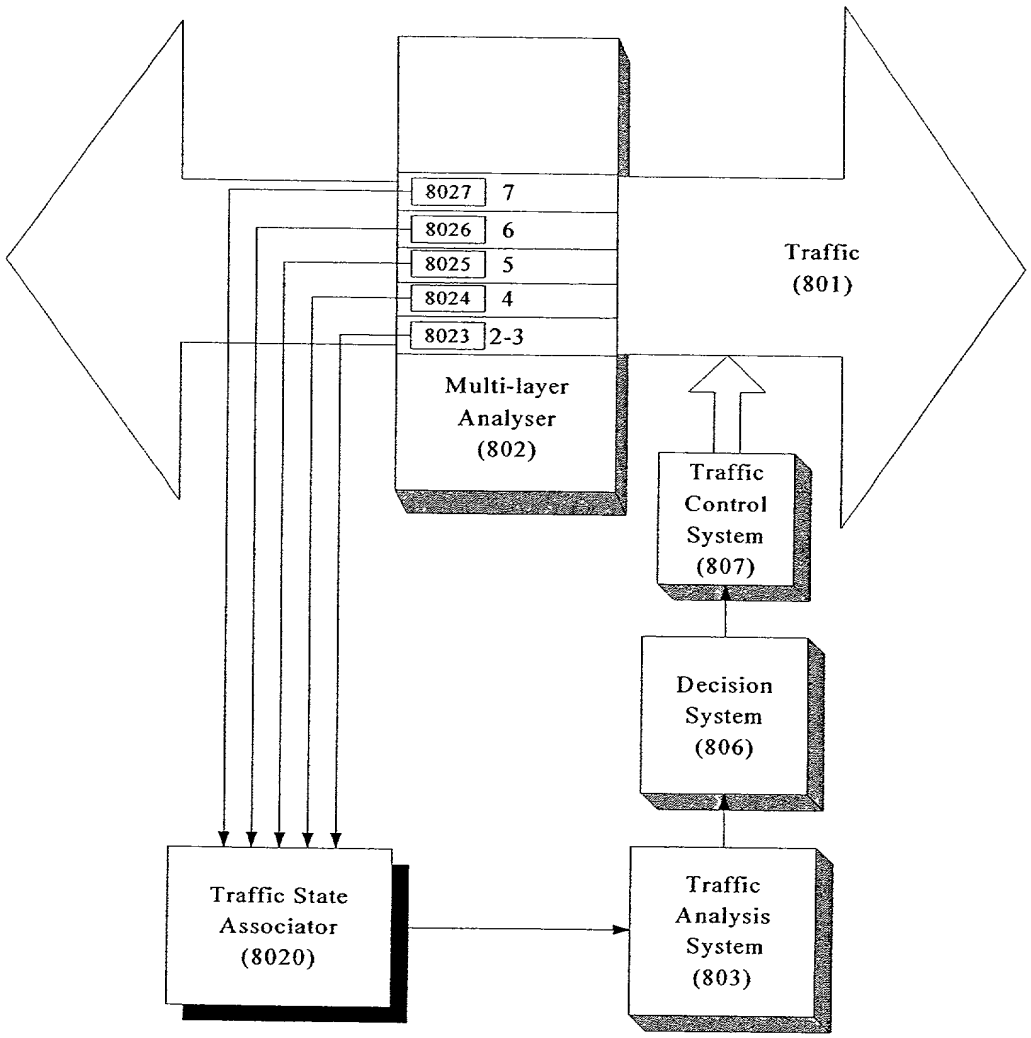
8027 7
8026 6
8025 5
8024 4
8023 2-3
Traffic
(801)
Multi-layer
Analyser
(802)
Traffic
Control
System
(807)
Decision
System
(806)
Traffic State
Associator
(8020)
Traffic
Analysis
System
(803)

Fig 8

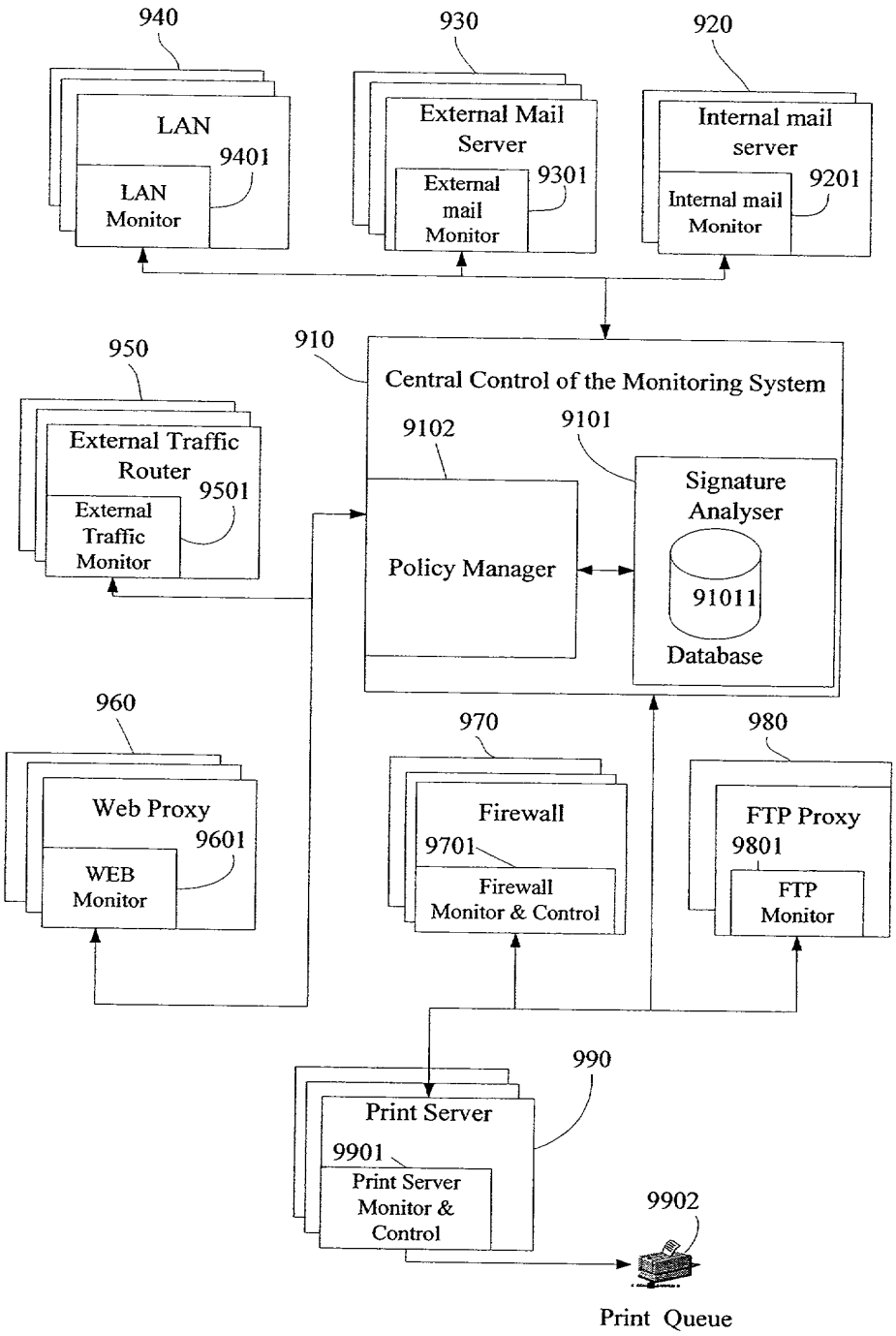
940
930
920
LAN
9401
LAN Monitor
External Mail Server
9301
External mail Monitor
Internal mail server
9201
Internal mail Monitor
950
910
Central Control of the Monitoring System
External Traffic Router
9501
External Traffic Monitor
9102
9101
Signature Analyser
Policy Manager
91011
Database
960
970
980
Web Proxy
9601
WEB Monitor
Firewall
9701
Firewall Monitor & Control
FTP Proxy
9801
FTP Monitor
990
Print Server
9901
Print Server Monitor & Control
9902
Print Queue

Figure 9

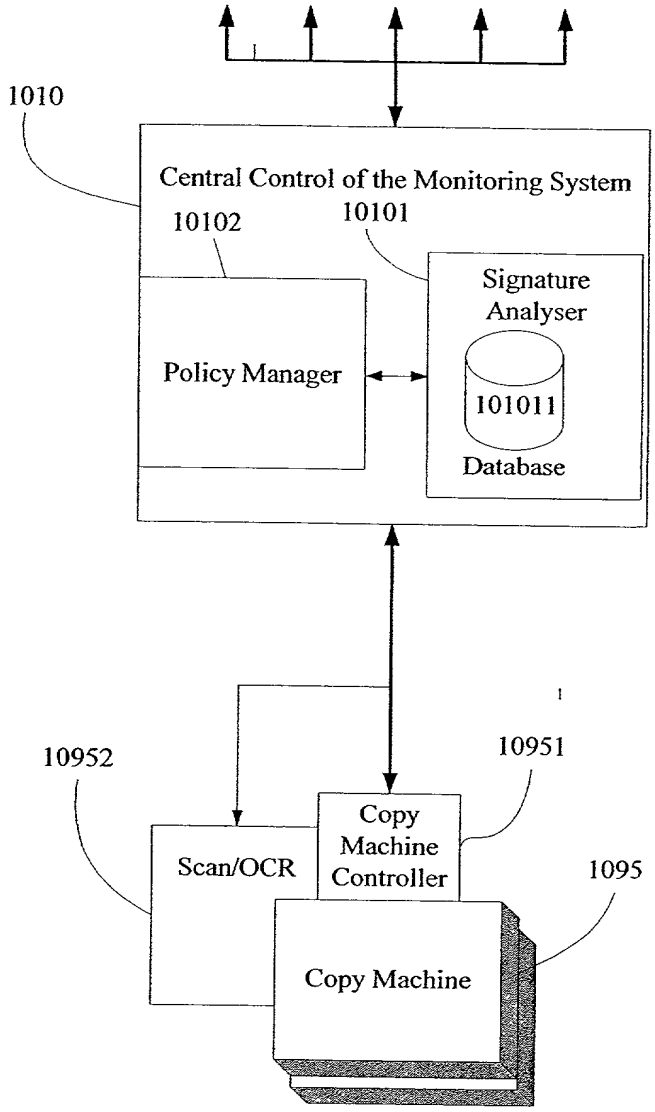
1010
Central Control of the Monitoring System
10102
10101
Signature Analyser
Policy Manager
101011
Database
10952
10951
Copy Machine Controller
Scan/OCR
1095
Copy Machine

Figure 10

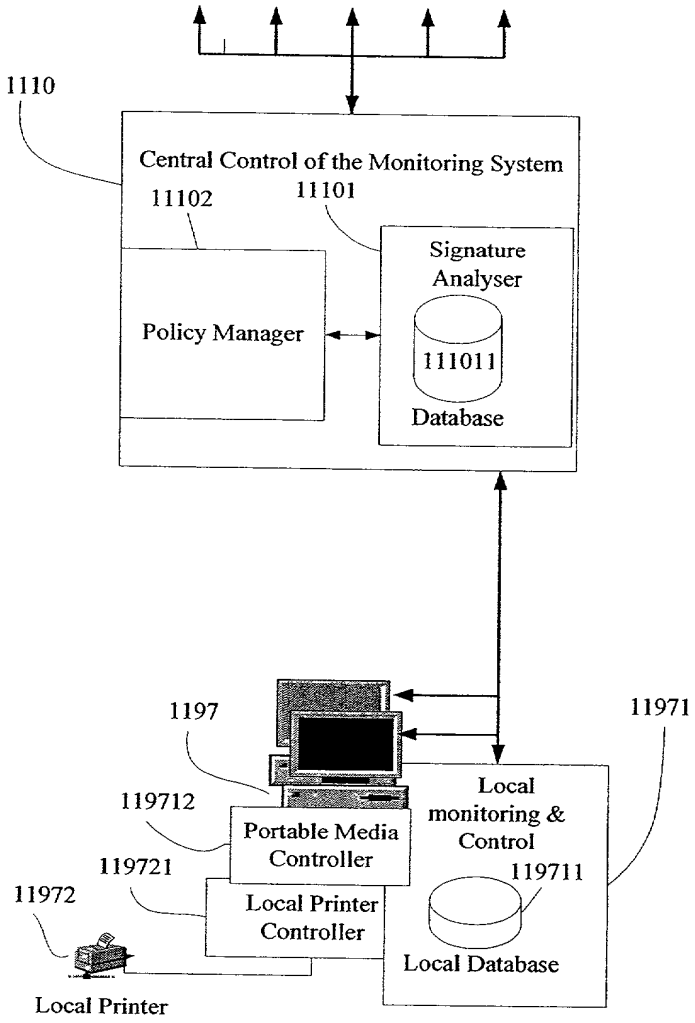
1110
Central Control of the Monitoring System
11102
11101
Signature Analyser
Policy Manager
111011
Database
1197
11971
119712
Portable Media Controller
Local monitoring & Control
119721
119711
11972
Local Printer Controller
Local Database
Local Printer

Figure 11